



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/807,902	04/19/2001	Kenichi Arimura	50212-211	7482

20277 7590 11/30/2001
MCDERMOTT WILL & EMERY
600 13TH STREET, N.W.
WASHINGTON, DC 20005-3096

EXAMINER

BUEKER, RICHARD R

ART UNIT PAPER NUMBER

1763

DATE MAILED: 11/30/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/807,902

Applicant(s)

ARIMURA ET AL.

Examiner

Richard Bueker

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 & 4.

- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The words "depressions" and "depression" are objected to as being non-idiomatic, vague and indefinite, because a depression is defined as having a central part lower than the margin, which does not properly describe elements 32 of applicants' Figs. 5-7. In claims 3 and 4, the phrases "said depression" and "said protrusion" lack proper antecedent basis because claim 1 defines plural depressions and protrusions. In claim 4, lines 4-7, the phrase "when said susceptor has a coefficient of thermal expansion greater than that of said susceptor support shaft" is vague and indefinite because it appears to be a conditional limitation that does not positively require susceptor to have has a coefficient of thermal expansion greater than that of said susceptor support shaft. In claims 5 and 6, the phrase "carbon graphite is objected to as non-idiomatic and redundant.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7 and 9-11 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bowman (5,044,943). Bowman

Art Unit: 1763

(see Figs.1-5) discloses a semiconductor production apparatus including a chamber, wafer support and heat source as claimed. The wafer support comprises a silicon carbide coated graphite susceptor (col. 3, lines 12-15) and a susceptor support shaft having a main shaft and three arms extending from the main shaft. The distal ends of the arms inherently are protrusions directed toward the susceptor. The protruding ends of the arms fit into openings 24 on the lower side of Bowman's susceptor. Figs. 3A and 3B illustrate that the protrusions and openings 24 are of substantially equal diameter. It is noted that the definition of "substantially" is "mainly but not completely that which is specified", and Bowman's apparatus inherently meets the limitation of "each said depression having an inside diameter substantially identical to an outside diameter of said protrusion" of claim 1. Also, the openings 24 of Bowman have an elongated form extending radially with respect to the center of the susceptor.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bowman taken in view of deBoer (5,427,620). deBoer (see Figs. 3, 6, 10 and 11) discloses a wafer support analogous to that of Bowman, and deBoer teaches (col. 7, lines 8-15) that it is desirable to construct the susceptor support shaft of a transparent material such as fused quartz, which is silica glass. It would have been obvious to one skilled in the art to provide the apparatus of Bowman with a susceptor support shaft or main shaft comprising silica glass because deBoer teaches that this transparent material allows radiant heat from the heat lamps to pass through and more evenly heat the susceptor.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over deBoer taken in view of Bowman. In deBoer's apparatus (col. 6, lines 58-61) the

Art Unit: 1763

susceptor support arms 46 have a peg 47 at their distal end. It would have been obvious to one skilled in the art to modify the pegs 47 of deBoer by providing them in at an angle in the manner taught by Bowman (Figs. 3A and 3B) for the distal ends of his arms. Bowman teaches (see col. 3, lines 60-68) that an angled protruding end of a support arm, combined with an opening 24 that is angled to match the angle of the protrusion, with desirably facilitate mounting of the susceptor 20 on spokes 30 by a downward motion of susceptor 20 onto spokes 30, one of which is shown in Figs 3A and 3B to illustrate this point.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Bueker whose telephone number is (703) 308-1895. The examiner can normally be reached on 9 AM - 5:30 PM, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (703) 308-1633. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-5408 for regular communications and (703) 305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Richard Bueker

Richard Bueker
Primary Examiner
Art Unit 1763